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CORRECT DATES FOR BUTTERFLY NAMES DESCRIBED BY WILLIAM HENRY EDWARDS IN THREE ENTOMOLOGICAL PUBLICATIONS

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Abstract The three journals involved are *Proc. Acad. Nat. Sci. Phila.* 13, 14; *Proc. Ent. Soc. Phila.* 1-6; *Trans. Amer. Ent. Soc.* 1-11. The content and publication dates of each of E's. articles is discussed and a summary in the form of an alphabetical list containing 224 species names given. For each name the date of release of the preprint and the date of publication of the volume part containing the name is given. An informal opinion of the Commission on Zoological Nomenclature establishing the validity of preprints for purposes of priority is quoted.

In the course of my study of the types of butterfly names proposed by William Henry Edwards it has been necessary to investigate the dates of publication usually associated with each name. Precise dates of publication for the various parts of the Proceedings of the Academy of Natural Sciences of Philadelphia were published by the Academy in 1914 in the "Index to Journal and Proceedings of the Academy of Natural Sciences of Philadelphia, 1812-1912." Dates for the various parts of the Proceedings of the Entomological Society of Philadelphia were published by me (1964), and those for the Transactions of the American Entomological Society, Volumes 1-10, are in press (Brown, 1964a).

These three journals have in common a bibliographic problem that may

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become vexing. Author's preprints were distributed from a month to a year before the article in question reached subscribers to the journal. Thus there are two possible "date of publication" for each name proposed in these journals, the date of release of the preprint and the date of release of the journal part containing the name. I informally presented this problem to the Commission on Zoological Nomenclature on 22 December 1963. A letter from Miss Margaret Spillane, Scientific Assistant to the Commission, dated 17 January 1964, reads in part:

"Having discussed this matter, Mr. Riley, Dr. China and I were in agreement that the case was already covered by the present Code, in that the issue of preprints to authors satisfies the criteria of publication set out in Article 8. The names concerned are therefore available from the date of issue of those preprints, insofar as this may be determined."

Thus the date to be used in establishing priority for the three journals under consideration is the date of release of the preprints, not the dates upon which the various parts of the journals were "published." In the following analyses I have presented all of the dates associated with each of Edwards's articles. The estimated dates of issue for the preprints are explained in the original studies of the publications (Brown 1964, 1964a). It would be redundant to repeat them here.

**Proceedings of the Academy of Natural Sciences of Philadelphia.
Volumes 13, 14.**

Until recently there has been no question about accepting the year-dates of the two volumes of the Proceedings of the Academy of Natural Sciences of Philadelphia in which Edwards's articles appeared. In 1947, dos Passos and Grey (p. 26) assigned 1863 as the year of publication for the volume for 1862. Higgins (1960: 438) used the year 1862 for the volume for 1861. The dates used by dos Passos and Grey and by Higgins come from the title pages of the volumes involved. Nabokov (1949: 487) had come to the conclusion that Edwards's first article, published in the 1861 volume, had in fact been published before the end of December in that year. He also suggested that there may have been an author's preprint published as early as July 1861. Brown ("1958": 207) presented conclusive evidence that a preprint or separate of Edwards's first article was mailed by Edwards on 30 September 1861.

The uncertainty noted in the above paragraph led me to write to Miss Margaret Greenwald, librarian for the Academy of Natural Sciences of Philadelphia, and inquire about the dates of publication for the Proceedings. She promptly referred me to the "Index to Journal and Proceedings of the Academy of Natural Sciences of Philadelphia, 1812-1912" published by the Academy in 1914. The following is drawn from the Index.

The volume for 1861 was issued in thirty-six signatures, each composed

of 16 pages. The information about the dates of issue for these came from acknowledgements of receipt at the Boston Society of Natural History (BSNH) and from the Smithsonian Institution (SI). It is safe to consider that the nine parts of the volume each was issued a few days, at least two or three, before the dates of receipt. The dates associated with volume 13, 1861, are these:

Signatures	Pages	Date of receipt	Institution
1-3	1-48		
4	49-64	31 March 1861	BSNH
5-6	65-96	30 June 1861	BSNH
7-8	97-120		
9-10	121-144	30 September 1861	BSNH
11-17	145-256		
18-21	257-328	28 December 1861	SI
22-25	329-382	31 December 1861	BSNH
26-36	385 <i>et seq</i>	31 March 1862	BSNH

Edward's paper in volume 13 occupied pages 160-164. Unfortunately the date of issue for signatures 11-17, containing these pages, is not precisely known. It is safe to assume that these pages were issued after 30 September and before 28 December 1861.

The volume for 1862 was issued in twelve numbers. From the paging of these it is evident that some signatures were of eight pages. In the "Index" it is stated that the dates of receipt are for the Smithsonian Institution, except for No. 7-9 which was presented at a meeting of the Academy. The dates for volume 14, 1862, are these:

Number	Pages	Date of receipt
1-2	1-96	25 April 1862
3-4	97-168	27 May 1862
5	169-272	
6	273-320	1 August 1862
7-9	321-404	28 October 1862
9 (error)	405-480	12 January 1863
10-12	481 <i>et seq</i>	26 February 1863

The above information presents a date for the publication of Edwards's second article (14: 54-58) a few days before 25 April 1862. His third article (14: 221-226) was published after 27 May and before 1 August 1862.

The fact that Edwards mailed a pre-print of his first article (13: 160-164) on 30 September 1861 led me to inquire of Dr. James Rehn about the method of publication for the Proceedings. He told me that the system used until the second decade of this century was to release to the authors of articles loose signatures as rapidly as they were printed. This allowed an author to distribute pre-prints before the Academy released a completed number of the Proceedings.

1. Descriptions of certain species of DIURNAL LEPIDOPTERA, found within the limits of the United States and British America. Proc. Acad. Nat. Sci. Phila., 13: 160-164, 1861.

Signature date: July, 1861.

Pre-print released: Probably in August, 1861. A copy mailed 30 September 1861 to Baird, on his return from vacation

Part issued: after 30 September, and before 28 December 1861, probably in November.

Names affected: *Melitaea mylitta*, *Melitaea minuta*, *Melitaea nycteis* (Edw. not Doubleday), *Limenitis weidemeyerii*, *Satyrus silvestris*, *Coenonympha inornata*, *Coenonympha orchracea*, *Lycaena anna*, *Lycaena scudderii*, *Lycaena fuliginosa*.

2. Descriptions of certain species of DIURNAL LEPIDOPTERA, found within the limits of the United States and British America. No. 2. Proc. Acad. Nat. Sci. Phila., 14: 54-58, 1862.

Signature date: February, 1862.

Pre-print released: probably in March, 1862.

Part issued: 25 April 1862.

Species names affected: *Argynnis atlantis*, *Thecla acadica*, *Thecla laeta*, *Lycaena neglecta*, *Chionobas taygete* (Edw. nec Huebner), *Pamphila verna*, *Pamphila rurea*, *Hesperia vialis*.

3. Descriptions of certain species of DIURNAL LEPIDOPTERA, found within the limits of the United States and British America. No. 3. Proc. Acad. Nat. Sci. Phila., 14: 221-226, 1862.

Signature date: April, 1862.

Pre-print released: probably in May, 1862.

Part issued: after 27 May and before 1 August 1862, probably in June 1862.

Species names affected: *Argynnis nokomis*, *Grapta faunus*, *Thecla californica*, *Thecla viridis*, *Thecla affinis*, *Lycaena behrii*, *Lycaena pembina*, *Lycaena shasta*, *Lycaena scudderii* ♀ (nec Edw. 1861), *Parnassius smintheus* "Doubleday" *Limenitis eulalia* "Doubleday."

Proceedings of the Entomological Society of Philadelphia.
Volumes 1-6, all published.

A detailed account of my finding about these volumes has been published in the Transactions of the American Entomological Society (Brown, 1964). From this it is possible to date with some degree of precision the issue of pre-prints of the articles by Edwards and the release of completed numbers of the journal by the Society.

Edwards published thirteen articles in the Proceedings of the Entomological Society of Philadelphia and another long series in its successor, the Transactions of the American Entomological Society. In the Proceedings he used fifty-four names. Two of these were considered by Edwards to be descriptions of butterflies figured but not described by Doubleday. Two of the names published validated manuscript names of Boisduval and one a manuscript name of Behr. Ten of the names apply to *Catocala*. In two cases, involving nine new names, there is a year-date discrepancy between the dates of issue of the pre-print and the "number" in which the article appeared. In two cases the date of issue of the "number" is established by the date it was received at the Smithsonian Institution and therefore a few days after the actual release. These dates are enclosed in parentheses.

The month dates for the release of the pre-print are estimated and placed in square brackets. In some cases it may be discovered that the release took place in the previous month.

1. Notes upon GRAPTA COMMA Harris, and GRAPTA FAUNUS Edwards. (C-ALBUM, of some Authors.) Proc. Ent. Soc. Phila., 1: 182-184, 1862.

Signature date: March, 1862.

Pre-print released: [April] 1862.

Number issued: 12 May 1862.

2. Descriptions of certain species of DIURNAL LEPIDOPTERA found within the United States, figured in Doubleday's Genera but not described. Proc. Ent. Soc. Phila., 1: 221-224, 1862.

Signature date: July, 1862.

Pre-print released: [August] 1862.

Number issued: 11 August 1862.

Species names affected: *Argynnis astarte* [Edw, nec Dbly], *Melitaea anicia* [Edw, nec Dbly]; *Melitaea chalcon* Dbly, *Timetes coeresia* Dbly.

3. Descriptions of certain species of DIURNAL LEPIDOPTERA found within the limits of the United States and British America, No. 1. Proc. Ent. Soc. Phila., 2: 14-22.

Signatures dated: March and April, 1863.

Pre-print released: [April] 1863.

Number issued: (July 29) 1863.

Species names affected: *Colias alexandra*, *Thecla clothilde*, *Hesperia mystic*, *Hesperia huron*, *Hesperia conspicua*, *Hesperia pontiac*, *Hesperia logan*, *Hesperia delaware*, *Hesperia uncas*.

4. Descriptions of certain species of DIURNAL LEPIDOPTERA found within the limits of the United States and British America, No. 2. Proc. Ent. Soc. Phila., 2: 78-82, 1863.

Signature date: July, 1863.

Pre-print released: [August] 1863.

Number issued: October 12, 1863.

Species names affected: *Parnassius sayii*, *Colias christina*, *Colias helena*, *Lycaena amica*, *Melitaea texana*, *Anthocaris ausonides* Bdv, *Chionobes chryxus* Dbly.

5. Descriptions of certain species of DIURNAL LEPIDOPTERA found within the limits of the United States and British America. No. 3. Proc. Ent. Soc. Phila., 2: 501-507, 1864.

Signature date: March, 1864.

Pre-print released: [April] 1864.

Number issued: 9 May 1864.

Species names affected: *Pieris nasturtii* Bdv. *il.*, *Pieris vernalis*, *Eresia cincta*, *Argynnis hesperis*, *Argynnis epithore* Bdv *il.*, *Melitaea pallida*, *Melitaea phaon*, *Lycaene echo*, *Lycaena lycea*, *Hesperia nemoris*.

6. Descriptions of certain species of CATOCALA found within the United States. Proc. Ent. Soc. Phila., 2: 508-512, 1864.

Signature date: March, 1864.

Pre-print released: [April] 1864.

Number issued: May 9, 1864.

Species names affected: *briseis*, *marmorata*, *californica*, *walshii*, *nebulosa*, *serena*, *tristis*, *gracilis*, *similis*, *minuta*, *parvula*.

7. Description of the female ARGYNNIS DIANA. Proc. Ent. Soc. Phila., 3: 431-433, 1864.

Signature date: November, 1864.

Pre-print released: [December] 1864.

Number issued: March 13, 1865.

8. Notes on the ARGYNNIDES of California. Proc. Ent. Soc. Phila., 3: 434-436 "1864."

Signature date: November, 1864.

Pre-print released: [December] 1864.

Number issued: March 13, 1865.

Species name affected: *Argynnis coronis*, Behr in lit.

9. Descriptions of certain species of DIURNAL LEPIDOPTERA found within the limits of the United States and British America. No. 4. Proc. Ent. Soc. Phila., 4: 201-204, 1865.

Signature date: January, 1865.

Pre-print released: [February] 1865.

Number issued: between April 4 and 11, 1865.

Species names affected: *Melitaea picta*, *Satyrus ridingsii*, *Hesperia napa*, *Hesperia maculata*, *Hesperia viator*, *Hesperia ricara*, *Lycaena rustica*.

10. Notes of PAPILIO ASTERIAS and SATURNIA PROMETHEA hermaphrodites. Proc. Ent. Soc. Phila., 4: 390, 1865.

Signature date: June, 1865.

Pre-print released: [July] 1865.

Number issued: between August 15 and 22, 1865.

11. Description of a new species of *Limenitis*. Proc. Ent. Soc. Phila., 5: 148, 1865.

Signature date: September, 1865.

Pre-print released: [October] 1865.

Number issued: between October 24 and November 7, 1865.

Species name affected: *Limenitis Proserpina*.

12. On certain North American species of *Satyrus*. Proc. Ent. Soc. Phila., 6: 195-200, "1886."

Signature date: July, 1866

Pre-print released: [August] 1866.

Number issued: (March 4) 1867.

13. Descriptions of certain species of DIURNAL LEPIDOPTERA found within the limits of the United States and British America. No. 5. Proc. Ent. Soc. Phila., 6: 200-208, "1866."

Signature dates: p. 200, July 1866; pp. 201-208, October 1866.

Pre-print released: [November] 1866.

Number issued: (March 4) 1867.

Species names affected: *Papilio bairdii*, *Colias behrii*, *Lycaena violacea*, *Lycaena pseudargiolus* Bdv and LeC., *Lycaena mertila*, *Syrichthus alba*, *Hesperia ottoe*, *Hesperia mingo*, *Hesperia yreka*.

**The Transactions of the American Entomological Society
Volumes 1-11.**

The following information has been derived from my critical study of the structure and dates of issue of the various parts of the early volumes of the Transactions, to be published late in 1964.

In addition to the above noted article I have studied the register of the Publications Committee of the American Entomological Society in the archives of the Academy of Natural Sciences of Philadelphia. This is a chronological logbook of articles published, giving the date the paper was

read to the assembled Society and the date the article was accepted for publication. William Henry Edwards published twenty articles in the Transactions. There are only twelve entries in the register pertaining to these articles. Apparently the omitted eight articles were considered by the committee to be continuations of a title previously accepted for publication.

In the following treatment of each of Edwards's articles I have always given three dates associated with it and sometimes five dates and a number. The three dates always stated are these: the signature drop-date, the probable date of release of the pre-print, and the date upon which the Part containing the article was released. These are dates that are involved in questions of priority. The two other dates are taken from the register of the Publication Committee. They are the date upon which the article was read before a meeting of the Society and the date upon which the article was accepted for publication. For some studies these may be useful clues. The serial number is that assigned in the register.

It has been customary to accept the drop-dates as the date of publication. As I have demonstrated in the basic article alluded to in the first paragraph these are by no means publication dates. In some cases they coincide with the month date in which the article was approved for publication. The bulk of the evidence is that they are the month in which the signature was set in type. This is not true for 1871. In the signatures dated "March 1871" is described *Colibas meadii* Edwards which was collected by Mead in July, 1871 (Brown, 1956).

The system used by the Society until about 1914 was to send to the author of a paper his copies of each signature as they were completed. The author then was at liberty to distribute these to his correspondents. Such distribution usually took place some time before actual publication of the Part of the Transactions containing the article. In a few instances the differences between the date the author had copies for distribution and the Society sent out the Part are as much as a year. Workers of the era of which I am writing accepted as published names appearing in the pre-prints. As a point in question Strecker considered Edwards's publication of *Satyrus wheelerii* as prior to his own publication of *Satyrus hoffmani* on the basis of the pre-print, although his name *hoffmani* was published, in the modern sense, some two or three months before the Part containing Edwards's description was released by the Society. Edwards himself always considered the date of the pre-print as the date of publication for his names. These statements are supported by their catalogues, Strecker's published in 1878 and Edwards's published in 1884.

The third date presented for each article is the date upon which the Part containing the article was released by the Society to its subscribers. Today, it would be considered the true date of publication and action of the International Commission in the future may decide that it is the date rather than the pre-print date that must be used for establishing priority.

1. Descriptions of certain species of DIURNAL LEPIDOPTERA found in the United States. Trans. Amer. Ent. Soc., 1: 286-288.
Serial No. 12, read 9 September 1867, accepted 14 October 1867.
Signature date: October, 1867.
Pre-print released: [November] 1867.
Officially issued: between 21 January and 4 February 1868.
Species names affected: *Hesperia pilatka*, *Hesperia nortonii*, *Hesperia osyka*.
2. Description of a new HESPERIAN. Trans. Amer. Ent. Soc., 2: 122.
Serial No. 30, read 13 July 1868, accepted 10 August 1868.
Signature date: August, 1868.
Pre-print released: [September] 1868.
Officially issued: February 8, 1869.
Species name affected: *Hesperia waco*.
3. Notes on a remarkable variety of PAPILIO TURNUS, and descriptions of two species of DIURNAL LEPIDOPTERA. Trans. Amer. Ent. Soc., 2: 207-210.
Signature date: September, 1868.
Pre-print released: [October] 1868.
Officially issued: 8 February 1869.
Species names affected: *Melitaea marcia*, *Thecla ontario*.
4. Descriptions of certain species of DIURNAL LEPIDOPTERA found in the United States. Trans. Amer. Ent. Soc., 2: 311-312.
Signature date: April, 1869.
Pre-print released: [May] 1869.
Officially issued: 8 November 1869.
Species names affected: *Hesperia wakulla*, *Hesperia eufala*, *Hesperia melane*.
5. Descriptions of new species of DIURNAL LEPIDOPTERA found within the United States. Trans. Amer. Ent. Soc., 2: 369-376.
Serial No. 43, read 9 August 1869, accepted 13 September 1869.
Signature date: September, 1869.
Pre-print released: [October] 1869.
Officially issued: 14 March 1870.
Species names affected: *Anthocaris reakirtii*, *Pieris hulda*, *Argynnis behrensii*, *Melitaea vesta*, *Melitaea arachne*, *Grapta oreas*, *Grapta satyrus*, *Caenonympha* [sic] *kodiak*, *Caenonympha* [sic] *brenda*, *Lycaena orcus*, *Thecla chalcis* (Behr i.l.).
6. Notes on GRAPTA C-AUREUM AND INTERROGATIONIS.—Fab. Trans. Amer. Ent. Soc., 3: 1-9.
Serial No. 45, read 11 October, accepted 8 November 1869.
Signature date: January 1870.
Pre-print released: [February] 1870.
Officially issued: 11 July 1870.
Species name affected: *Grapta fabricii*.
7. Descriptions of new species of DIURNAL LEPIDOPTERA found within the United States. Trans. Amer. Ent. Soc., 3: 10-22.
Signature date: January, 1870.
Pre-print released: [February] 1870.
Officially issued: 11 July 1870.
Species names affected: *Parnassius behrii*, *Colias edwardsii*, *Colias emilia*, *Colias ariadne*, *Pieris virginienesis*, *Argynnis nevadensis*, *Grapta silenus*, *Grapta zephyrus*, *Grapta marsyas*, *Grapta dryas*, *Thecla behrii*, *Thecla tetra*, *Thecla dryope*, *Lycaena kodiak*, *Chrysophanus cupreus*, *Chrysophanus hermes*, *Chrysophanus viginienesis*, *Hesperia hayhurstii*.
8. Descriptions of new North American DIURNAL LEPIDOPTERA. Trans. Amer.

Ent. Soc., 3: 189-196.

Serial No. 61, accepted 14 November 1870

Signature date: November, 1870.

Pre-print released: [December] 1870.

Officially issued: between [January and April] 1871.

Species names affected: *Pieris calyce*, *Argynnis bischoffi*, *Melitaea sterope*, *Melitaea thekla*, *Eresia punctata*, *Chionobas stretchii*, *Satyrus gabbii*, *Thecla dryope*, *Lycaena mintha*, *Lycaena fulla*, *Lemonias palmerii*, *Syrichtus petreius*, *Cyclopides skada*, *Hesperia minima*.

9. Descriptions of new species of DIURNAL LEPIDOPTERA found within the United States. Trans. Amer. Ent. Soc., 3: 205-216.

Signature date: January, 1871.

Pre-print released: [February] 1871.

Officially issued: between [January and April 1872].

Species names affected: *Anthocaris hyantis*, *Phyciodes orseis*, *Phyciodes canace*, *Thecla cygnus*, *Thecla castalis*, *Lycaena helios*, *Lycaena viaca*, *Lycaena ardea*, *Lycaena glaucon*, *Lycaena gyas*, *Lycaena fea*, *Chrysophanus ianthe*, *Charis nemesis*, *Euptychia rubricata*, *Coenonympha ampelos*, *Syrichtus oceanus*, *Stereoptes skada*, *Heteropterus arene*, *Hesperia procris*, *Hesperia tamenund*, *Hesperia ophis*.

10. Descriptions of new species of North American butterflies. Trans. Amer. Ent. Soc. 3: 266-277.

Signatures dated: March, 1871, April, 1871.

Pre-print released: September 1871.

Officially issued: between [January and April] 1872.

Note: This article contains references to material collected as late as July 1871.

Species names affected: *Anthocaris olympia*, *Colias meadii*, *Argynnis helena*, *Phyciodes camillus*, *Phyciodes emissa*, *Chrysophanus sirius*, *Thecla ninus*, *Thecla autolyceus*, *Thecla alcestis*, *Lycaena daunia*, *Lycaena alce*, *Erebia rhodia*, *Erebia callias*, *Thymelicus hylax*, *Pamphila draco*, *Pamphila licinus*, *Pamphila attalus*, *Hesperia eos*, *Hesperia dacotah*, *Hesperia horus*.

11. Descriptions of new species of DIURNAL LEPIDOPTERA found within the United States. Trans. Amer. Ent. Soc., 4: 61-70.

Serial No. 72, read and accepted 11 March 1872.

Signatures dated: February, 1872, and March, 1872.

Pre-print released: [April] 1872.

Officially issued: 9 December 1872.

Species names affected: *Colias astraea*, *Anthocaris julia*, *Argynnis brennerii*, *Argynnis inornata*, *Argynnis eurynome*, *Argynnis meadii*, *Grapta hylas*, *Satyrus charon*, *Erebia meadii*.

12. Descriptions of DIURNAL LEPIDOPTERA found within the United States. Trans. Amer. Ent. Soc., 4: 343-348.

Signature date: March, 1873.

Pre-print released: [April] 1873.

Officially issued: between 1 October and 31 December 1873.

Species names affected: *Satyrus wheeleri*, *Thecla crysalus*, *Lemonias cythera*, *Hesperia chusea*, *Hesperia yuma*, *Lycaena melissa*.

13. Descriptions of new species of DIURNAL LEPIDOPTERA found in North America. Trans. Amer. Ent. Soc., 5: 13-19.

Serial No. 87, accepted 9 June 1873.

Signatures dated: January 1874, and February 1874.

Pre-print released: [March] 1874.

Officially issued: [December] 1874.

Species names affected: *Argynnis rhodope*, *Satyrus phocus*, *Argynnis nitocris*, *Melitaea acaustus*, *Synchlœ crocale*, *Geirocheilus tritonia*.

14. Descriptions of new species of DIURNAL LEPIDOPTERA found in North America. Trans. Amer. Ent. Soc., 5: 103-111.

Serial No. 90, and read and accepted 12 January 1874.

Signature dated: October, 1874.

Pre-print released: [November] 1874.

Officially issued: [December] 1874.

Species names affected: *Apatura leilia*, *Argynnis nausicca*, *Argynnis opis*, *Argynnis clio*, *Grapta rustica*, *Grapta silvius*, *Thecla siva*.

15. Description of a new species of *Catocala* from Arizona. Trans. Amer. Ent. Soc., 5: 112.

Signature date: October, 1874.

Pre-print released: [November] 1874.

Officially issued: [December] 1874.

Specific name affected: *Catocala editha*.

16. Descriptions of new species of DIURNAL LEPIDOPTERA found within the United States and British N.A. Trans. Amer. Ent. Soc., 5: 202-208.

Signature date: April, 1876.

Pre-print released: [May] 1876.

Officially issued: between 13 March and 20 March 1877.

Species names affected: *Colias eriphyle*, *Argynnis carpeuterii*, *Euptychia henshawi*, *Thanaos alpheus*, *Hesperia comus*, *Hesperia nereus*, *Hesperia zampa*, *Papilio oregonia*.

17. New species of DIURNAL LEPIDOPTERA. Trans. Amer. Ent. Soc., 5: 289-292.

Signature date: December, 1876.

Pre-print released: [January] 1877.

Officially issued: between March 13 and March 20, 1877.

Species names affected: *Argynnis alcestis*, *Chrysophanus nais*, *Hesperia deva*.

18. Catalogue of the DIURNAL LEPIDOPTERA of America north of Mexico. Trans. Amer. Ent. Soc., 6: 1-67.

Serial No. 117, read 12 January 1877, accepted 9, February 1877.

Signatures dated: February 1877 through March 1877.

Pre-print released: [April] 1877.

Officially issued: between [July 1 and September 1] 1877.

19. Descriptions of new species of DIURNAL LEPIDOPTERA found within the United States. Trans. Amer. Ent. Soc., 9: 1-8.

Serial No. 155, read 13 December 1880, accepted 14 January, 1881.

Signature date: February, 1881.

Pre-print released: 11 March 1881.

Officially issued: 14 October 1881.

Species names affected: *Argynnis artonis*, *Eurygona abreas*, *Lycæna cyna*, *Pamphila harpalus*, *Pamphila cabelus*, *Pamphila verus*, *Pamphila regulus*, *Pamphila lagus*, *Pamphila taxiles*, *Amblyscirtes simius*.

20. Notes on the species of CALLIDRYAS found within the United States.

Trans. Amer. Ent. Soc. 9: 9-14.

Serial No. 156, read 13 December 1880, accepted 14 January 1881.

Signature date: February 1881.

Pre-print released: 11 March 1881.

Officially issued: 14 October 1881.

21. Revised catalogue of the DIURNAL LEPIDOPTERA of America north of Mexico. Trans. Amer. Ent. Soc. 11: 245-338.

Serial No. 178, read 14 March 1884, accepted 11 April 1884.

Signatures dated: July 1884 and November 1884.

Pre-print released: January 1885.

Officially issued: between [January 1 and March 31] 1885.

Alphabetical list of names proposed and dates of release.

Name	Pre-print released	Part issued
<i>abreas, Eurygona</i>	Mch 1881	Oct. 14, 1881
<i>acadica, Thecla</i>	[Mch] 1862	April 25, 1862
<i>acastus, Melitaea</i>	[Mch] 1874	[Dec.] 1874
<i>affinis, Thecla</i>	[May] 1862	bet. May 27–Aug. 1, 1862
<i>alba, Syrictus</i>	[Nov] 1866	(March 4) 1867
<i>alce, Lycaena</i>	Sept. 1871	[Jan–Apr. 1872]
<i>alexandra, Colias</i>	[Apr] 1863	(July 29) 1863
<i>alcestis, Argynnis</i>	[Jan] 1877	Mch 13–20, 1877
<i>alcestis, Thecla</i>	Sept. 1871	[Jan–Apr. 1872]
<i>alpheus, Thanaos</i>	[May] 1876	Mch. 13–20, 1877
<i>amica, Lycaena</i>	[Aug] 1863	Oct. 12, 1863
<i>ampelos, Coenonympha</i>	[Feb.] 1871	[Jan–Apr. 1872]
<i>anicia Melitaea (nec Dbly.)</i>	[Aug] 1862	Aug. 11, 1862
<i>anna, Lycaena</i>	[Aug] 1861	bet. Oct. 1–Dec. 27, 1861
<i>arachne, Melitaea</i>	[Oct] 1869	Mch. 14, 1870
<i>ardea, Lycaena</i>	[Feb] 1871	[Jan–Apr. 1872]
<i>arene, Heteropterus</i>	[Feb] 1871	[Jan–Apr. 1872]
<i>ariadne, Colias</i>	[Feb] 1870	July 11, 1870
<i>artonis, Argynnis</i>	Mch. 1881	Oct. 14, 1881
<i>astarte, Argynnis (nec Dbly.)</i>	[Aug] 1862	Aug. 11, 1862
<i>astraea, Colias</i>	[Apr] 1872	Dec. 9, 1872
<i>atlantis, Argynnis</i>	[Mch] 1862	April 25, 1862
<i>attalus, Pamphila</i>	Sept. 1871	[Jan–Apr. 1872]
<i>autolyceus, Thecla</i>	Sept. 1871	[Jan–Apr. 1872]
<i>bairdii, Papilio</i>	[Nov] 1866	(Mch 4) 1867
<i>behrensi, Argynnis</i>	[Oct] 1869	Mch. 14, 1870
<i>behrii, Colias</i>	[Nov] 1866	(Mch 4) 1867
<i>behrii, Lycaena</i>	[May] 1862	bet. May 27–Aug. 1, 1862
<i>behrii, Parnassius</i>	[Feb] 1870	July 11, 1870
<i>behrii, Thecla</i>	[Feb] 1870	July 11, 1870
<i>bischoffi, Argynnis</i>	[Dec] 1870	[Jan–Apr. 1871]
<i>bremnerii, Argynnis</i>	[Apr] 1872	Dec. 9, 1872
<i>brenda, Coenonympha</i>	[Oct] 1869	Mch. 14, 1870
<i>briscis, Catocala</i>	[Apr] 1864	May 9, 1864
<i>cabelus, Pamphila</i>	Mch. 1881	Oct. 14, 1881
<i>californica, Catocala</i>	[Apr] 1864	May 9, 1864
<i>californica, Thecla</i>	[May] 1862	bet. May 27–Aug. 1, 1862
<i>callias, Erebia</i>	Sept. 1871	[Jan–Apr., 1872]
<i>calyce, Pieris</i>	[Dec.] 1870	[Jan–Apr., 1871]
<i>camillus, Phyciodes</i>	Sept. 1871	[Jan–Apr., 1872]
<i>canace, Phyciodes</i>	Feb. 1871	[Jan–Apr., 1872]
<i>carpenteri, Argynnis</i>	[May] 1876	Mch. 13–20, 1877
<i>castalis, Thecla</i>	[Feb] 1871	[Jan–Apr., 1872]
<i>chalcis, Thecla (Behr i.l.)</i>	[Oct] 1869	Mch. 14, 1870
<i>charon, Satyrus</i>	[Apr] 1872	Dec. 9, 1872
<i>christina, Colias</i>	[Aug] 1863	Oct. 12, 1863
<i>chusca, Hesperia</i>	[Apr] 1873	[Oct–Dec., 1873]
<i>cincta, Eresia</i>	[Apr] 1864	May 9, 1864
<i>clio, Argynnis</i>	[Mch] 1874]Dec] 1874
<i>clothilde, Thecla</i>	[Apr] 1863	(July 29) 1863
<i>comus, Hesperia</i>	[May] 1876	Mch. 13–20, 1877
<i>conspicua, Hesperia</i>	[Apr] 1863	(July 29) 1863
<i>coronis, Argynnis (Behr i.l.)</i>	[Dec] 1864	Mch. 13, 1865

<i>crocale, Synchronoe</i>	[Mch] 1874	[Dec] 1874
<i>crysalus, Thecla</i>	[Apr] 1873	[Oct.-Dec., 1873]
<i>cupreus, Chrysophanus</i>	[Feb] 1870	July 11, 1870
<i>cygnus, Thecla</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>cyna, Lycaena</i>	Mch. 1881	Oct. 14, 1881
<i>cythera, Lemonias</i>	[Apr] 1873	[Oct.-Dec., 1873]
<i>dacotah, Hesperia</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>daunia, Lycaena</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>delaware, Hesperia</i>	[Apr] 1863	(July 29) 1863
<i>deva, Hesperia</i>	[Jan] 1877	Mch. 13-20, 1877
<i>draco, Pamphila</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>dryas, Grapta</i>	[Feb] 1870	July 11, 1870
<i>dryope, Thecla</i>	[Feb] 1870	July 11, 1870
<i>echo, Lycaena</i>	[Apr] 1864	May 9, 1864
<i>editha, Catocala</i>	[Nov] 1874	[Dec] 1874
<i>edwardsii, Colias</i>	[Feb] 1870	July 11, 1870
<i>emilia, Colias</i>	[Feb] 1870	July 11, 1870
<i>emissa, Phyciodes</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>eos, Hesperia</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>epithore, Argynnis (Bdv. i.l.)</i>	[Apr] 1864	May 9, 1864
<i>eriphyle, Colias</i>	[May] 1876	Mch. 12-20, 1877
<i>eufala, Hesperia</i>	[May] 1869	Nov. 8, 1869
<i>eulalia, Limenitis ("Doubleday")</i>	[May] 1862	bet. May 27-Aug. 1, 1862
<i>eurynome, Argynnis</i>	[Apr] 1872	Dec. 9, 1872
<i>fabricii, Grapta</i>	[Feb] 1870	July 11, 1870
<i>faunus, Grapta</i>	[May] 1862	bet. May 27-Aug. 1, 1862
<i>fea, Lycaena</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>fuliginosa, Lycaena</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>fulla, Lycaena</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>gabbii, Satyrus</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>glaucon, Lycaena</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>gracilis, Catocala</i>	[Apr] 1864	May 9, 1864
<i>gyas, Lycaena</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>harpalus, Pamphila</i>	Mch. 1881	Oct. 14, 1881
<i>hayhurstii, Hesperia</i>	[Feb] 1870	July 11, 1870
<i>helena, Argynnis</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>helena, Colias</i>	[Aug] 1863	Oct. 12, 1863
<i>helios, Lycaena</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>henshawii, Euptychia</i>	[May] 1876	Mch. 13-20, 1877
<i>hermes, Chrysophanus</i>	[Feb] 1870	July 11, 1870
<i>hesperia, Argynnis</i>	[Apr] 1864	May 9, 1864
<i>horus, Hesperia</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>hulda, Pieris</i>	[Oct] 1869	Mch. 14, 1870
<i>huron, Hesperia</i>	[Apr] 1863	(July 29) 1863
<i>hyantis, Anthocaris</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>hylas, Grapta</i>	[Apr] 1872	Dec. 9, 1872
<i>hylax, Thymelicus</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>ianthe, Chrysophanus</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>inornata, Argynnis</i>	[Apr] 1872	Dec. 9, 1872
<i>inornata, Coenonympha</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>julia, Anthocaris</i>	[Apr] 1872	Dec. 9, 1872
<i>kodiak, Coenonympha</i>	[Oct] 1869	Mch. 14, 1870
<i>kodiak, Lycaena</i>	[Feb] 1870	July 11, 1870
<i>laeta, Thecla</i>	[Mch] 1862	April 25, 1862
<i>lagus, Pamphila</i>	March 1881	Oct. 14, 1881

<i>leilia</i> , <i>Apatura</i>	[Nov] 1874	Dec. 1874
<i>licinus</i> , <i>Pamphila</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>logan</i> , <i>Hesperia</i>	[Apr] 1863	(July 29) 1863
<i>lycea</i> , <i>Lycaena</i>	[Apr] 1864	May 9, 1864
<i>maculata</i> , <i>Hesperia</i>	[Feb] 1865	April 4-11, 1865
<i>marcia</i> , <i>Melitaea</i>	[Oct] 1868	Feb. 8, 1869
<i>marmorata</i> , <i>Catocala</i>	[Apr 1864]	May 9, 1864
<i>marsyas</i> , <i>Grapta</i>	[Feb] 1870	July 11, 1870
<i>meadii</i> , <i>Argynnis</i>	[Apr] 1872	Dec. 9, 1872
<i>meadii</i> , <i>Colias</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>meadii</i> , <i>Erebia</i>	[Apr] 1872	Dec. 9, 1872
<i>melissa</i> , <i>Lycaena</i>	[Apr] 1873	[Oct.-Dec., 1873]
<i>melane</i> , <i>Hesperia</i>	[May] 1869	Nov. 8, 1869
<i>mertila</i> , <i>Lycaena</i>	[Nov] 1866	(March 4) 1867
<i>mingo</i> , <i>Hesperia</i>	[Nov] 1866	(March 4) 1867
<i>minima</i> , <i>Hesperia</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>mintha</i> , <i>Lycaena</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>minata</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>minuta</i> , <i>Melitaea</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>mylitta</i> , <i>Melitaea</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>mystic</i> , <i>Hesperia</i>	[Apr] 1863	(July 29) 1863
<i>nais</i> , <i>Chrysophanus</i>	[Jan] 1877	Me. 13-20, 1877
<i>napa</i> , <i>Hesperia</i>	[Feb] 1865	April 4-11, 1865
<i>nasturtii</i> , <i>Pieris</i> (Bdv i.l.)	[Apr] 1864	May 9, 1864
<i>nausicca</i> , <i>Argynnis</i>	[Nov] 1874	[Dec] 1874
<i>nebulosa</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>neglecta</i> , <i>Lycaena</i>	[March] 1862	April 25, 1862
<i>nemesis</i> , <i>Charis</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>nemoris</i> , <i>Hesperia</i>	[Apr] 1864	May 9, 1864
<i>nereus</i> , <i>Hesperia</i>	[May] 1876	Me. 13-20, 1877
<i>nevadensis</i> , <i>Argynnis</i>	[Feb] 1870	July 11, 1870
<i>ninus</i> , <i>Thecla</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>nitocris</i> , <i>Argynnis</i>	[Me. 1874	[Dec] 1874
<i>nokomis</i> , <i>Argynnis</i>	[May] 1862	bet. May 27-Aug. 1, 1862
<i>nortonii</i> , <i>Hesperia</i>	[Nov] 1867	Jan. 21-Feb. 2, 1868
<i>nycteis</i> , <i>Melitaea</i> ("Doubleday")	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>oceanus</i> , <i>Syrichtus</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>ochracea</i> , <i>Coenonympha</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>olympia</i> , <i>Anthocaris</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>ontario</i> , <i>Thecla</i>	[Oct] 1868	Feb. 8, 1869
<i>ophis</i> , <i>Hesperia</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>opis</i> , <i>Argynnis</i>	[Nov] 1874	[Dec] 1874
<i>orcus</i> , <i>Lycaena</i>	[Oct] 1869	March 14, 1870
<i>oreas</i> , <i>Grapta</i>	[Oct] 1869	March 14, 1870
<i>oregonia</i> , <i>Papilio</i>	[May] 1876	Me. 13-20, 1877
<i>orseis</i> , <i>Phyciodes</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>osyka</i> , <i>Hesperia</i>	[Nov] 1867	Jan. 21-Feb. 2, 1868
<i>ottoe</i> , <i>Hesperia</i>	[Nov] 1866	(March 4) 1867
<i>pallida</i> , <i>Melitaea</i>	[Apr] 1864	May 9, 1864
<i>palmeri</i> , <i>Lemonias</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>parvula</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>pembina</i> , <i>Lycaena</i>	[May] 1862	bet. May 27-Aug. 1, 1862
<i>petreius</i> , <i>Syrichtus</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>phaon</i> , <i>Melitaea</i>	[Apr] 1864	May 9, 1864
<i>phocus</i> , <i>Satyrus</i>	[Me. 1874	Dec. 1874
<i>picta</i> , <i>Melitaea</i>	[Feb] 1865	Apr. 4-11, 1865
<i>pilatka</i> , <i>Hesperia</i>	[Nov] 1867	Jan. 21-Feb. 2, 1868
<i>pontiac</i> , <i>Hesperia</i>	[Apr] 1863	(July 29) 1863
<i>procris</i> , <i>Hesperia</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>proserpina</i> , <i>Limenitis</i>	[Oct] 1865	Oct. 24-Nov. 7, 1865
<i>punctata</i> , <i>Eresia</i>	[Dec] 1870	[Jan.-Apr., 1871]

<i>reakirtii</i> , <i>Anthocaris</i>	[Oct] 1869	March 14, 1870
<i>regulus</i> , <i>Pamphila</i>	March 1881	Oct. 14, 1881
<i>rhodia</i> , <i>Erebia</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>rhodope</i> , <i>Argynnis</i>	[Mch] 1874	[Dec] 1874
<i>ricara</i> , <i>Hesperia</i>	[Feb] 1865	Apr. 4-11, 1865
<i>ridingsii</i> , <i>Satyrus</i>	[Feb] 1865	Apr. 4-11, 1865
<i>rubricata</i> , <i>Euptychia</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>rurea</i> , <i>Pamphila</i>	[March] 1862	April 25, 1862
<i>rustica</i> , <i>Grapta</i>	[Nov] 1874	[Dec] 1874
<i>rustica</i> , <i>Lycaena</i>	[Feb] 1865	Apr. 4-11, 1865
<i>satyrus</i> , <i>Grapta</i>	[Oct] 1869	March 14, 1870
<i>sayii</i> , <i>Parnassius</i>	[Aug] 1863	Oct. 12, 1863
<i>scudderii</i> , <i>Lycaena</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>scudderii</i> , <i>Lycaena</i> ♀	[May] 1862	April 25, 1862
<i>serena</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>shasta</i> , <i>Lycaena</i>	[May] 1862	April 25, 1862
<i>silenus</i> , <i>Grapta</i>	[Feb] 1870	July 11, 1870
<i>silvestris</i> , <i>Satyrus</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>silvius</i> , <i>Grapta</i>	[Nov] 1874	[Dec] 1874
<i>similis</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>simius</i> , <i>Amblyscirtes</i>	March 1881	Oct. 14, 1881
<i>sirius</i> , <i>Chrysophanus</i>	Sept. 1871	[Jan.-Apr., 1872]
<i>siva</i> , <i>Thecla</i>	[Nov] 1874	[Dec] 1874
<i>skada</i> , <i>Cyclopides</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>skada</i> , <i>Stereoptes</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>smintheus</i> , <i>Parnassius</i> ("Doubleday")	[May] 1862	April 25, 1862
<i>sterope</i> , <i>Melitaea</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>stretchii</i> , <i>Chinobas</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>tamenund</i> , <i>Hesperia</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>taxiles</i> , <i>Pamphila</i>	March 1881	Oct. 14, 1881
<i>taygetes</i> , <i>Chionobas</i> ("Huebner")	[March] 1862	April 25, 1862
<i>tetra</i> , <i>Thecla</i>	[Feb] 1870	July 11, 1870
<i>texana</i> , <i>Melitaea</i>	[Aug] 1863	Oct. 12, 1863
<i>thekla</i> , <i>Melitaea</i>	[Dec] 1870	[Jan.-Apr., 1871]
<i>tristis</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>tritonis</i> , <i>Geirocheilus</i>	[Mch] 1874	[Dec] 1874
<i>uncas</i> , <i>Hesperia</i>	[Apr] 1963	(July 29) 1863
<i>verna</i> , <i>Pamphila</i>	[Mch] 1862	April 25, 1862
<i>vernalis</i> , <i>Pieris</i>	[Apr] 1864	May 9, 1864
<i>verus</i> , <i>Pamphila</i>	March 1881	Oct. 14, 1881
<i>vesta</i> , <i>Melitaea</i>	[Oct] 1869	March 14, 1870
<i>viaca</i> , <i>Lycaena</i>	[Feb] 1871	[Jan.-Apr., 1872]
<i>vialis</i> , <i>Hesperia</i>	[Mch] 1862	April 25, 1862
<i>viator</i> , <i>Hesperia</i>	[Feb] 1865	Apr. 4-11, 1865
<i>violacea</i> , <i>Lycaena</i>	[Nov] 1866	(March 4) 1867
<i>virginiensis</i> , <i>Chrysophanus</i>	[Feb] 1870	July 11, 1870
<i>virginiensis</i> , <i>Pieris</i>	[Feb] 1870	July 11, 1870
<i>viridis</i> , <i>Thecla</i>	[May] 1862	bet. May 27-Aug. 1, 1862
<i>waco</i> , <i>Hesperia</i>	[Sept] 1868	Feb. 8, 1869
<i>wakulla</i> , <i>Hesperia</i>	[May] 1869	Nov. 8, 1869
<i>walshii</i> , <i>Catocala</i>	[Apr] 1864	May 9, 1864
<i>weidemeyerii</i> , <i>Limenitis</i>	[Apr] 1873	[Oct.-Dec.] 1873
<i>wheeleri</i> , <i>Satyrus</i>	[Aug] 1861	bet. Oct. 1-Dec. 27, 1861
<i>yreka</i> , <i>Hesperia</i>	[Nov] 1866	(March 4) 1867
<i>yuma</i> , <i>Hesperia</i>	[Apr] 1873	[Oct.-Dec.] 1873
<i>zampa</i> , <i>Hesperia</i>	[May] 1876	March 13-20, 1877
<i>zephyrus</i> , <i>Grapta</i>	[Feb] 1870	July 11, 1870

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**PHYLOGENETIC-TAXONOMIC SIGNIFICANCE OF LAST INSTAR OF
PROTOXAEA GLORIOSA FOX, WITH DESCRIPTIONS OF FIRST AND LAST
INSTARS (HYMENOPTERA: APOIDEA)**

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Abstract The first and last larval instars of the oxaeine *Protoxaea gloriosa* Fox are described taxonomically. The last stage larva is very different from those of other Andrenidae, a fact suggesting that the Oxaeinae should be elevated to family rank. Certain similarities between *Protoxaea gloriosa* and the *Nomada*-like parasitic authophorids are also noted but are considered to be a result of convergent evolution.

Of the four subfamilies of the Andrenidae, the larval representatives of only the Panurginae and Andreninae have been studied critically to date. The following descriptions of the first and last instars of *Protoxaea gloriosa* Fox are offered here as the first taxonomic account of the immature stages of a member of the third subfamily, the Oxaeinae. The larva of the monotypic South American Euhherbstiinae (Moure, 1950) remains unknown. The Oxaeinae, primarily Neotropical in distribution, consist of only two genera, *Oxaea* and *Protoxaea*, with *P. gloriosa* being the most commonly encountered species in the United States. Details of its biology will be presented in a forthcoming paper by Doctors M. A. Cazier and E. G. Linsley

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